

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

M458639088

FACILITY: MATERIAL PROCESSING INC		SRN / ID: M4586
LOCATION: 17423 W JEFFERSON, RIVERVIEW		DISTRICT: Detroit
CITY: RIVERVIEW		COUNTY: WAYNE
CONTACT: Maureen Tanner, Human Resource Director		ACTIVITY DATE: 03/28/2017
STAFF: Jonathan Lamb	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled inspection, FY '17		
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, MDEQ-AQD  
 PERSONNEL PRESENT: Patricia Maureen Tanner, Director of Human Resources; Toni Martinovski, Director of Operations  
 FACILITY PHONE NUMBER: (734) 282-1888  
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**FACILITY BACKGROUND:**

Materials Processing, Inc. (MPI) performs coating of automotive parts; currently, most of the coating is for military vehicle parts and mufflers for tractors and large vehicles. In 1992, MPI moved their coating operations from their previous address of 7000 Lonyo, Dearborn into their current address in Riverview in 1992, which was a former Firestone facility. In 2016, MPI sold the building but is currently leasing a portion of the building from the new owner to operate MPI's coating and shipping operations. The present site in Riverview is approximately 500,000 sq. feet; a portion of the building not leased to MPI is used for the storage of metals.

MPI currently runs one shift, 7:00 a.m. to 3:30 p.m., Monday through Friday (with occasional Saturdays) and has 48 employees on site. The facility is located in a primarily industrial/commercial area along the west bank of the Detroit River.

(Note: The former facility on Lonyo, previously issued SRN M4470, was sold in February 2014 and razed.)

**COMPLAINT/COMPLIANCE HISTORY:**

There have been no violations issued against the company in the past five years, and the company has not had a history of residential complaints.

**PROCESS DESCRIPTION AND EQUIPMENT:**

MPI coats only metal parts at this facility; no plastic parts are coated at this time. Facility uses both solvent-based and water-based coatings, in addition to powder coating. There are three coating lines, two batch coating booths, a burn-off oven, and an acid dip line.

Line 1: At this time, most of the coating performed at the facility is done on Line 1, with most of the parts for military vehicles and the automotive industry (bumpers, doors, facias). Using an overhead conveyor, parts go through a 3-stage wash (phosphate alkaline wash and water rinse), dried/pre-heated in a 300°F dryer for better coating adhesion, and then coated in the two paint booths with manual sprayers. Coated parts are then cured in two natural gas convection ovens at 400°F. This emission unit was originally permitted for one infra-red curing oven, so it appears that the two natural gas ovens were installed without a permit, which would be in violation of Rule 201.

Line 2: Line 2 is currently used less often than Lines 1 and 3. The set up is similar to Line 1, except there is no wash. Parts go straight to the two manual paint booths and then into a natural gas convection oven at 350°F for curing. Note: The facility is considering combining Lines 1 and 2 into one single coating line; the facility was notified that this would likely require a permit modification.

Line 3 (EU-CoatingLine#3): Line 3 is mainly used for painting mufflers with a high heat coating. The parts are hung on racks via an overhead conveyor and sent through a "grit blaster", which uses steel shot to remove any oxidation and oil on the surface. The parts then pass through two manual spray booths and then a natural gas-

fired curing oven. An internally-vented baghouse is used to control particulate emissions from the "grit blaster". The "grit blaster" is not included in the permit for Line 3, but is exempt per Rule 285(2)(l)(vi)(B).

Batch Booth 1 and Batch Booth 2: These are manual spray booths with a bake oven. Batch Booth 1 (formerly known as the Prototype Booth) is permitted; Batch Booth 2 operates under Rule 290(2)(a)(i).

Line 8: This is an acid dip line, which is vented within the building. Parts are dipped in citric acid prior to coating to help improve adhesion of the paints. Currently, the line is only used a couple times per month. The line is exempt from permitting under Rule 285(2)(r)(iii). MSDS for the citric acid anhydrous can be found in the facility file.

Burn-Off Oven: Natural gas-fired batch oven with afterburner which is used to burn off paint residue and overspray on conveyor hangers. This oven is currently not in use; the oven remains on site but has been disconnected.

All booths have the capability to perform manual powder coating; the powder coating operations on these lines are exempt per Rule 287(d). The booths use dry filters to trap overspray. Filters are changed daily, and used filters are disposed of as solid waste. All booths and ovens are vented through roof stacks. During a site visit in July 2014, I went on the roof to inspect the stacks and did not see any evidence of paint overspray at that time.

There are no boilers in the facility. The rest of the building is used for non-production purposes, such as maintenance, warehousing, and shipping.

### **APPLICABLE RULES/PERMIT CONDITIONS:**

MPI is a HAP opt-out source and currently operates under the following permits:

- Wayne County Permit No. C-10135 through C-10137, issued on November 1, 1993, for Line 1.
- Wayne County Permit No. C-10545 through C-10547, issued on October 21, 1994, for Line 2.
- Wayne County Permit No. C-11054, issued on January 28, 1997, for the Batch Booth 1 (aka Prototype Booth).
- Permit to Install No. 193-06, issued on August 18, 2006, for Line 3. This permit also set facility-wide HAP limits, allowing the facility to opt-out of Title V requirements.
- Permit to Install No. 149-08, issued on July 1, 2008, for the gas-fired burn-off oven.

Based on VOC emission limits in the permits above and Rule 290(2)(a)(i), the potential to emit for VOC from the three coating lines and two batch booths is 43.76 tons per year, which is below the major source threshold of 100 tons per year for VOCs.

Material usage, emission, and operation records from January 2016 through March 2017 were reviewed to determine compliance at the time of inspection. These records and MSDSs for the coatings, solvents, and acid dip tank can be found in the orange facility file.

### **Line 1 – Wayne County Permit No. C-10135 through C-10137, Special Conditions:**

17. IN COMPLIANCE. VOC emissions for Line 1 were below the permit limits of 32.55 pounds per hour, based on 24-hour averaging period, and 21.12 tons per year. The facility reported a total of 3.3 tons of VOC emissions in 2016 for Line 1, and the highest average hourly VOC emission rate reported during the compliance period was 11.26 pounds per hour on October 15, 2016. (Note: facility takes a conservative approach by calculating daily VOC emissions based on actual daily operating hours, rather than 24-hour averaging).

18. IN COMPLIANCE. The facility does not calculate the VOC emission rate in pounds per gallon based on a 24-hour averaging time, as required per Special Condition 27 and Appendix A. However, using the daily records provided I could calculate the daily average emission rate in pounds per gallon and found the facility did not exceed the allowable VOC emission rate of 3.5 pounds per gallon; the highest daily emission rate was 3.5 pounds per gallon on March 16, 2017, though most days during the compliance period showed a VOC emission rate under 3.0 pounds per gallon. Note: A review of the permit evaluation form demonstrated that the 3.5 pounds VOC per gallon limit applied to the coatings only, so cleaning solvents were not included in the calculation. Manufacturer's data sheets of the coatings used on Line 1 show that all coatings have a VOC content less than 3.5 lb/gal (minus water) as applied, except for a solvent-based coating B18, which has a VOC content of 5.03 lb/gal. This coating is used sparingly on Line 1. Records show no usage of B18 on Line 1 in 2016, and limited usage in 2017.

19. IN COMPLIANCE. Line 1 uses less than 76,600 gallons of coating per year. 3,926 gallons were used on Line 1 in 2016.

20. IN COMPLIANCE. Line 1 uses less than 1,250 gallons of solvent per year. 435.5 gallons of solvents were used on Line 1 in 2016.
21. IN COMPLIANCE. Testing has not been performed to verify particulate emission rates. However, the allowable particulate emission rate of 0.5 lb/hr was based on a 0.006 lb/1000 lb emission rate. Per Op. Memo No. 14, it is assumed that the particulate emissions from the booths do not exceed the 0.006 lb/1000 lb emission rate if the control equipment (dry filters) are properly installed and maintained and visible emissions are not observed. During the inspection, I did not observe visible emissions and the dry filters appeared properly installed; in the previous inspection in 2014, I did not observe any evidence of paint overspray on the roof. Compliance with both the hourly particulate emission rate and the limit on annual hours of operation set in Special Condition 24 also indicates compliance with the annual particulate emission limit of 2.4 tons per year.
22. IN COMPLIANCE. No visible emissions observed during inspection while line was running.
23. IN COMPLIANCE. Filters and equipment are installed and operated as required.
24. IN COMPLIANCE. Line 1 is operated less than the permit limit of 4,800 hours per year. Line 1 was operated 1,985.4 hours in 2016.
25. IN COMPLIANCE. Records of hours of operation, amount of coatings used, and VOC content of coatings are maintained as required.
26. IN COMPLIANCE. VOC content of coatings is determined by the manufacturer using an approved method.
27. NOT IN COMPLIANCE. VOC emission rates in pounds per gallon, 24-hour averaging period, were not calculated as required. VOC emission rates for pounds per hour and tons per year were properly calculated and maintained.
28. IN COMPLIANCE. No complaints of odors from this facility have been received.
29. IN COMPLIANCE. Paint booth stack dimensions appear to meet the permit requirements of minimum height of 45 feet and maximum diameter of 24 inches. There are four stacks for the coating booths, two per booth.
30. NOT EVALUATED. The four oven stacks appear to meet the permit requirements of minimum height of 32 feet and maximum diameter of 12 inches; however, these stack heights were permitted for an infrared oven, not the two natural gas-fired ovens currently installed.
31. NOT EVALUATED. AQD has not required stack testing at this facility.

Line 2 – Wayne County Permit No. C-10545 through C-10547, Special Conditions:

17. NOT EVALUATED. Line 2 was not in operation during the inspection, so I was unable to perform visible emission readings. During the previous inspection in 2014, I did not see evidence of paint overspray on the roof near the stacks and during this inspection the booth filters appeared to be installed and maintained properly, so it seems like the particulate emissions are effectively controlled.
18. IN COMPLIANCE. While testing has not been performed to verify particulate emission rates, per Op. Memo No. 14, it is assumed that the particulate emissions from the booths do not exceed the permit limits of 0.006 lb/1000 lb exhaust air, 0.93 lb/hr, nor 1.73 tons/year as long as the control equipment (dry filters) are properly installed and maintained and visible emissions are not observed.
19. IN COMPLIANCE. Exhaust filters are installed and maintained properly.
20. NOT IN COMPLIANCE. Based on daily records, the facility exceeded the allowable VOC emission rate of 4.2 pounds per gallon once during the compliance period; a VOC emission rate of 16.25 pounds per gallon was recorded on August 2, 2016. Calculations were made on a daily average using actual operating hours. The facility did not exceed the permit limit of 3.64 tons per year, based on 12-month rolling average; total VOC emissions in 2016 were 246 pounds (0.12 tons).
21. IN COMPLIANCE. Coating usage in Line 2 was below the permit limits of 30 gallons of coating per hour and 52,000 gallons of coating per year. Highest daily coating usage was 5.0 gallons per hour on August 2, 2016. A total of 139.25 gallons of coating was used in 2016.
22. IN COMPLIANCE. Line 2 is operated less than the permit limits of 12 hours/day and 3,744 hours/year. Based on daily operating records, the highest daily usage was 11.5 hours on January 29, 2016. Line 2 operated 502 hours over 105 days in 2016, which averages to 4.78 hours per each day Line 2 was in use.
23. NOT IN COMPLIANCE. Records show that the VOC content of coatings used on Line 2 exceeded the permit limits of 0.14 lb/gal (with water) and 0.30 lb/gal (minus water), as applied. The following coatings (with VOC content) were used in Line 2 since January 2016: C600A (3 lb/gal VOC), Carc (0.43 lb/gal VOC), Misc (3.42 lb/gal VOC), and Primer (2.85 lb/gal VOC).
24. IN COMPLIANCE. Stack dimensions of the paint booths appear to meet the permit requirements of minimum height of 45 feet and maximum diameter of 34 inches. There is one stack for each booth for a total of two paint booth stacks. Bake oven stack dimensions appear to meet the permit requirements of a minimum height of 32 feet and a maximum diameter of 12 inches.
25. IN COMPLIANCE. No complaints of odors from this facility have been received.
26. IN COMPLIANCE. Records of hours of operation, amount of coatings used, VOC emission rates, and VOC

content of coatings are maintained per permit specifications.

27. IN COMPLIANCE. VOC content of coatings is determined by the manufacturer using an approved method.

Line 3 (EU-CoatingLine#3) - Permit to Install No. 193-06, Special Conditions:

EU-CoatingLine#3

1.1: IN COMPLIANCE. The highest 12-month rolling total VOC emissions from EU-CoatingLine#3 were 1.7 tons from April 2016 through March 2017, below the permitted limit of 10.0 tons per 12-month rolling time period.

1.2: NOT IN COMPLIANCE. Records show that the VOC content of coatings used on EU-CoatingLine#3 exceeded the permit limit of 0.24 lb/gallon VOC. The following coatings (with VOC content) were used in Line 3 since January 2016: B18 (5.03 lb/gal VOC), C600A (3 lb/gal VOC), Carc (0.43 lb/gal VOC), Misc (3.42 lb/gal VOC), and Primer (2.85 lb/gal VOC).

1.3: IN COMPLIANCE. Waste materials are stored and disposed of in an approved manner.

1.4: IN COMPLIANCE. Spent filters are stored and disposed of in an approved manner.

1.5: IN COMPLIANCE. All coatings containing VOCs and HAPs are kept in closed containers to minimize fugitive emissions.

1.6: IN COMPLIANCE. Filters are installed and maintained as required.

1.7: IN COMPLIANCE. EU-CoatingLine#3 is equipped with approved coating applicators.

1.8: IN COMPLIANCE. The VOC content, water content, and density of all coatings are determined using manufacturer's data, as allowed by the permit.

1.9: IN COMPLIANCE. All emission calculations are performed in a format acceptable to AQD.

1.10: IN COMPLIANCE. MPI maintains copies of MSDS/Manufacturer's Data Sheets for all coatings used.

1.11: IN COMPLIANCE. MPI maintains the following records in accordance with the permit:

a) Gallons (with water) of each coating, reducer, clean-up solvent, etc. used.

b) VOC content (minus water) of each coating, reducer, clean-up solvent, etc. as applied.

c) VOC mass emission calculations determining the monthly emission rate in tons per calendar month.

d) VOC mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

1.12a and b: IN COMPLIANCE. Line 3 stack dimensions for SV03-1 and SV03-2 (both paint booth stacks) appear to meet the permit requirements of a maximum diameter of 40 inches and a minimum height of 45 feet.

1.12c: IN COMPLIANCE. Line 3 stack dimensions for SV03-3 (oven stack) appear to meet the permit requirements of a maximum diameter of 40 inches and a minimum height of 46 feet.

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2.1a: IN COMPLIANCE. HAP emissions are below the permit limit of 9.0 tons per year for each individual HAP. Facility reported facility-wide total HAP emissions of 0.19 tons in 2016.

2.1b: IN COMPLIANCE. Total HAP emissions are below the permit limit of 22.5 tons per year. Facility reported facility-wide total HAP emissions of 0.19 tons in 2016.

2.2: IN COMPLIANCE. HAP content of all coatings is determined using manufacturer's formulation data, as required by the permit.

2.3: IN COMPLIANCE. HAP emissions are calculated in a format acceptable to AQD using manufacturer formulation data.

2.4: IN COMPLIANCE. MPI maintains the following records in accordance with the permit:

a) Gallons or pounds of each HAP-containing material used.

b) Gallons or pounds of each HAP-containing material reclaimed, if applicable.

c) HAP content, in pounds per gallon or pounds per pound, of each HAP-containing material used.

d) Aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month. Individual HAP emission calculations are not maintained, but the aggregate HAP emissions are low enough to demonstrate compliance.

e) Aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of the calendar month. Individual HAP emission calculations are not maintained, but the aggregate HAP emissions are low enough to demonstrate compliance.

Batch Booth 1 – Wayne County Permit No. C-11054, Special Conditions:

17. NOT IN COMPLIANCE. Based on emission records, the VOC emission rates exceeded the permit limit of 1.41 pounds per hour a total of nine times during the compliance period, based on a monthly average. Specifically, the emission rates were exceeded in January, February, May, June, September, October, November, and December 2016, and in March 2017. The highest average hourly emission rate was 4.57 pounds per hour for September 2016. Facility was below the yearly VOC limit of 3 tons per 12-month rolling time period; the highest 12-month rolling total VOC emissions was 0.78 tons from January 2016 through December 2016.

Note: This condition does not specify averaging time for the pound per hour limit and there was no permit evaluation info in the permit file. I used monthly averaging because that is the shortest required timeframe for recordkeeping in the permit, per Special Condition 25.

18. IN COMPLIANCE. Cleaning solvent usage in Batch Booth 1 was below the permit limit of 20 gallons per year. The cleaning solvent usage in Batch Booth 1 was 16.5 gallons in 2016.

19. IN COMPLIANCE. While testing has not been performed to verify particulate emission rates, per Op. Memo No. 14, it is assumed that the particulate emissions from the booths will not exceed the permit limit of 0.006 lbs/1000 lbs. exhaust air as long as visible emissions are not detected and the control equipment (dry filters) are properly installed and maintained, as per Special Condition 21.

20. IN COMPLIANCE. Dry filters and airless spray applicators are installed and maintained as required.

21. IN COMPLIANCE. Batch Booth 1 was not being used during the inspection; however, the filters were properly installed and there was no evidence of paint overspray on the roof during the previous inspection in July 2014, so this condition is assumed to be in compliance at this time.

22. IN COMPLIANCE. Batch Booth 1 was operated 756.3 hours in 2016, below the permitted limit of 6,000 hours/year.

23: IN COMPLIANCE. Stack dimensions of the two stacks appear to meet the permit limits of a maximum diameter of 42 inches and a minimum height of 45 feet.

24: IN COMPLIANCE. VOC content, water content, density, and solids fraction of coatings are determined using manufacturer's data, as allowed by the permit.

25: IN COMPLIANCE. VOC emission and cleaning solvent usage records are maintained as required.

26: NOT EVALUATED. AQD has not required stack testing at this facility.

27: IN COMPLIANCE. AQD has not received any complaints of odors from this facility.

#### Batch Booth 2 – Rule 290:

IN COMPLIANCE. Uncontrolled VOC emissions from Batch Booth 2 did not exceed 1000 pounds in any month since January 2016. Records indicate that Batch Booth 2 was only used during two months during this time period, April 2016 and January 2017, with total uncontrolled VOC emissions totaling 1.32 pounds and 1.20 pounds, respectively, which allows Batch Booth 2 to comply with Rule 290(2)(a)(i).

#### FINAL COMPLIANCE DETERMINATION:

Based on this inspection, Materials Processing, Inc. was determined to be in noncompliance with the following permit conditions:

- Rule 201(1): Facility installed two natural gas-fired curing ovens on Line 1 without obtaining a Permit to Install.
- Wayne County Permit No. C-10135 through C-10137, Special Condition 27: VOC emission rates for Line 1 in pounds per gallon, 24-hour averaging period, were not calculated as required.
- Wayne County Permit No. C-10545 through C-10547, Special Condition 20: The VOC emission rate on Line 2 of 16.25 pounds per hour on August 2, 2016, exceeded the permit limit of 4.2 pounds per hour, daily average based on operating hours.
- Wayne County Permit No. C-10545 through C-10547, Special Condition 23: Records show that the VOC content of coatings used on Line 2 exceeded the permit limits of 0.14 lb/gal (with water) and 0.30 lb/gal (minus water), as applied. The following coatings (with VOC content) were used in Line 2 since January 2016: C600A (3 lb/gal VOC), Carc (0.43 lb/gal VOC), Misc (3.42 lb/gal VOC), and Primer (2.85 lb/gal VOC).
- Permit to Install 193-06, Special Condition 1.2: Records show that the VOC content of coatings used on EU-CoatingLine#3 exceeded the permit limit of 0.24 lb/gallon VOC. The following coatings (with VOC content) were used in Line 2 since January 2016: B18 (5.03 lb/gal VOC), C600A (3 lb/gal VOC), Carc (0.43 lb/gal VOC), Misc (3.42 lb/gal VOC), and Primer (2.85 lb/gal VOC).
- Wayne County Permit No. C-11054, Special Condition 17: Based on emission records, the VOC emission rates for Batch Booth 1 exceeded the permit limit of 1.41 pounds per hour a total of nine times during the compliance period, based on a monthly average. Specifically, the emission rates were exceeded in January, February, May, June, September, October, November, and December 2016, and in March 2017. The highest average hourly emission rate was 4.57 lb/hr for September 2016.

As a result, MPI was issued a Violation Notice on August 3, 2017.

NAME V. Long

DATE 8-3-17

SUPERVISOR JK